

REMARKS

These remarks are made in response to the Office Action of July 17, 2007 (Office Action). As this response is timely filed within the 3-month shortened statutory period, no fee is believed due.

Claims 1-6, 8-12 and 14-19 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 6,210,771 to Post et al. (hereinafter "Post"). Claims 1 to 19 are currently pending in the present application. No new matter is added by the amendments.

Objections to the Drawings

In the Office Action, the drawings were objected to for not clearly describing or showing the securing mechanism 55. The Examiner stated that no detail of the securing mechanism is shown or discussed for holding a cavity closed. Applicants respectfully submit that the securing mechanism 55 shown in FIG. 7 secures the pressure active interface 1 to the garment 60 in a manner that closes the cavity 10. The securing mechanism 55 is further illustrated in replacement drawing FIG. 5 as providing closure to the cavity 10 and raising the cavity from a surface of the textile interface. Applicants respectfully request withdrawal of this objection.

Other Objections

In the Office Action, it is asserted that 1) all reference numerals should be in parentheses or deleted, 2) Claims 3 and 7 appear to be missing text, 3) in regard to claim 12, it is unclear how a structure can be integral with a void, and 4) claim 18 lacks antecedent basis for "said one or more raised collapsible cavities". Appropriate corrections have been made. Applicants respectfully request withdrawal of this objection.

Rejections under §112

In the Office Action, claims 7 and 13 were rejected under 35 U.S.C. 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have amended claim 7 to identify that the one or more collapsible cavities are fashioned from a plasticized fiber or material

to provide rigidity in accordance with the Specification. (See Specification, paragraph [0015], lines 5-7.)

It was further stated that claim 7 appears to be contradictory, and that it is unclear how the cavity can be formed from the rigid material and still be collapsible. In addition it was further stated that it was unclear as to how such a rigid structure would still be considered to be a fabric. Applicants respectfully address the Examiner's attention to a portion of the Specification below:

"The one or more collapsible cavities 10 may be fashioned from any suitable material, natural and/or manmade. For example, the one or more collapsible cavities 10 can be formed from a plasticized fiber or material to provide rigidity. Also, the one or more collapsible cavities 10 may be reinforced with a support or base element 13 which can preferably be injection molded to provide improved strength and support. Other configurations and/or arrangements may also be used in forming the textile interface 1 and/or the one or more collapsible cavities 10 thereof." (Specification, paragraph [0020]) (emphasis provided)

Applicants respectfully assert that amended claim 7 is fully supported in the Specification at paragraph [0020], and as amended is no longer contradictory. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 7 and 12.

Certain Aspects Of Applicants' Invention

It may be useful, prior to addressing the cited reference, to reiterate certain aspects of the invention. One embodiment of the invention, typified by Claim 1, is a pressure activated interface (1) comprising a textile construction having one or more collapsible cavities (10) and one or more conductive contact areas (30) associated with one or more leads (20). In this embodiment, at least two of the one or more conductive contact areas (30) are inside the one or more collapsible cavities (10) and are elevated relative to the one or more leads (20). In this arrangement, the one or more collapsible

cavities are raised from a surface of said textile construction. (See Specification, paragraph [0010])

The Claims Define Over POST

As already noted, independent Claims 1-6, 8-12 and 14-19 were each rejected as being anticipated by Post. Post is directed to a textile fabric having electrical functionality. The textile fabric includes a first series of parallel fibers interwoven in a perpendicular direction to a second series of parallel fibers. The first series and second series of parallel fibers form a matrix for establishing electrical connections. The Post device is shown as follows:

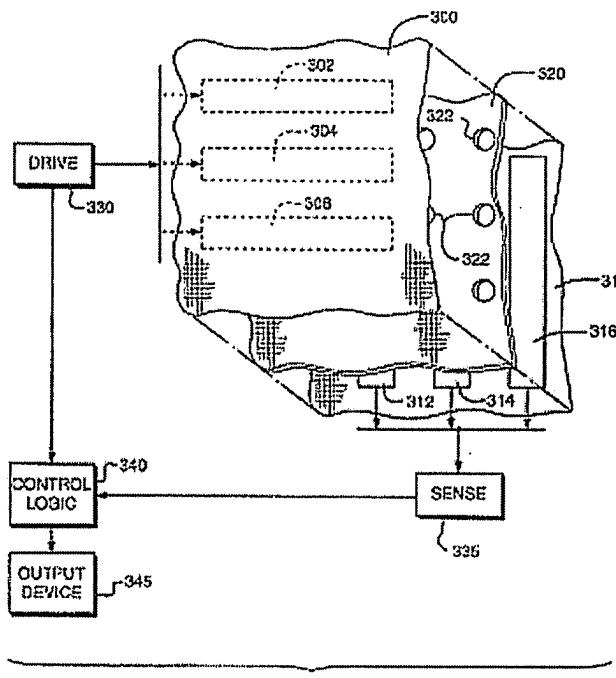


FIG. 3

Applicants respectfully submit, however, that Post fails to expressly or inherently teach every feature recited in the claims. For example, although Post discloses a plurality of electrically conductive fibers integrated in a matrix of woven fibers, Post's textile

fabric does not include one or more collapsible cavities that are raised from a surface of the textile construction, as in amended claim 1. Support for this amendment is found at paragraph [0010] of the present specification: "the one or more collapsible cavities that are fashioned so as to be raised or elevated from the surface of the textile interface."

Post is fundamentally different from Applicants' invention. In Posts' textile fabric the electrical devices are located within the matrix of the fabric itself (col. 2, lines 7-9). As shown in FIG. 3, the matrix is relatively flat along the surface of the textile fabric thus allowing a user to press down on the fabric. As an example, a user can push the fabric down with a single finger at a particular location to activate a contact. Post however does not contemplate collapsible cavities raised from a surface of the textile fabric, as in amended claim 1, which in an exemplary embodiment can allow the user to squeeze the raised collapsible cavities, for example, using two fingers. FIGS 1 and 2 of Applicants' drawings clearly show that the collapsible cavities are raised from the surface and are not flat along the surface of the textile.

On page 3 of the Office Action, it was stated that the contact areas of Post's textile fabric are elevated above the lead since they are on top of fabric. A particular portion of Post cited discloses the following:

"A "piece work" application utilizing sewn strips of conductive material to form a switch matrix is shown in FIG. 3. A first fabric panel 300 has sewn or otherwise adhered on the reverse side thereof a series of three parallel rows of conductive material 302, 304, 306. A second fabric panel 310 has sewn (or otherwise adhered) on the obverse side thereof a series of three parallel columns of conductive material 312, 314, 316. The rows 302, 304, 306 run perpendicular to columns 312, 314, 316, crossing one another at unique regions of overlap." (Col. 6, lines 58-67.)

From the above passage (and in view of FIG. 3), however, it is clear that Post does not contemplate one or more collapsible cavities that are elevated relative to one or more leads wherein the one or more collapsible cavities are raised from a surface of the textile construction as in amended claim 1. (See Specification, paragraph [0010].)

Although the contacts 302 are on top of the fabric 310, the cavities 322 are by no means raised above the surface.

In one exemplary embodiment, the aspect of raising the collapsible cavities from the textile surface permits the one or more conductive contact areas (30) to be raised to accommodate a mechanical interaction, as expressed in claim 15.

Furthermore, Post does not teach that the contacts are inside the one or more collapsible cavities as in amended claim 1. In another portion, Post discloses:

"A panel of soft, thick fabric 320 such as felt, velvet, netting or quilt batting, is sandwiched between panels 300, 310 when these are joined. Panel 320 is provided with a series of holes 322 at the regions of overlap, thereby permitting contact between opposed conductive regions when the user presses the corresponding point on the overlying face of panel 300. When the user presses a region of overlap, the intervening layer 320 provides a springy, button-like effect that is mechanically responsive to the user's touch." (Col. 7, lines 10-17.)

As described in the referenced portion above and throughout, the matrix has an obverse side and a reverse side separated by a panel 320 that is sandwiched there between. Although the panel 320 has holes (cavities) 322 to allow the obverse side to contact the reverse side when pressed, the contacts (302, 304, 306, 312, 314, and 317) interwoven within the textile fabric are not within the holes 322.

Moreover, altering Post's textile fabric in such a manner to produce a raised aspect would result in a non-functional design. Given that the matrix should be relatively flat along the surface to allow the obverse side and reverse side of the fabric panels (300, 310) to remain sufficiently apart, introducing a raised aspect would increase the tension between the two fabric panels, thus requiring possibly greater force to push down.

In one exemplary embodiment of Applicant's disclosure, the collapsible cavities can be raised from the surface of the textile construction by way of a securing mechanism (55). The securing mechanism, as shown in replacement drawing FIG. 5 and in FIG. 7, can hold the collapsible cavities (10) closed. By holding the collapsible cavities (10) closed, the securing mechanism (55) can provide rigidity to the textile fabric which

permit the collapsible cavities (10) to be raised from the surface of the textile fabric. Nowhere does Post teach a securing mechanism for selectively holding said one or more collapsible cavities closed and raised above said textile as in amended claim 13. Moreover, there would be no reason for Post to use a securing mechanism for such purposes since the fabric panels (300, 310) are relatively flat along the surface and interwoven within the textile material.

With regard to claim 14, Applicants assert that Post fails to expressly or inherently teach every feature claimed. For example, Post does not teach a textile construction fashioned with one or more collapsible cavities (10) raised from a surface of the textile construction with one or more conductive contact areas (30) therein, as in amended claim 18.

With regard to claim 18, Applicants assert that Post fails to expressly or inherently teach every feature claimed. For example, Post does not teach a textile construction with one or more collapsible cavities (10) raised from a surface of the flexible interface to produce one or more raised collapsible cavities along an edge or perimeter, as in amended claim 18. On Page 3 of the Office Action, it was stated that any location where the matrix ends is seen to be "an edge of perimeter". Applicants respectfully argue, however, that the edge of the matrix does not provide a raised collapsible cavity.

Moreover, Post fails to teach a mechanical interaction causing a collapse of the raised collapsible cavities (10) above the surface to close a switch, as in amended claim 19. Again, Post only teaches a matrix structure along a relatively flat surface of a textile fabric, whereby a user can press down on the matrix structure. Nowhere does Post contemplate raised collapsible cavities along an edge of a textile fabric, wherein the collapsible cavities can be collapsed above the surface.

Accordingly, Post fails to teach, either expressly or inherently, every feature recited in independent Claims 1, 14, and 18. Applicants respectfully submit, therefore, that Claims 1, 14, and 18 define over the prior art. Applicants further respectfully submit that whereas each of the remaining claims depends from Claim 1, 14, and 18 while reciting additional features, these dependent claims likewise define over the prior art.

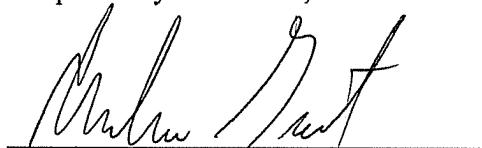
Conclusion

In view of the foregoing, Applicants respectfully submit that the specification, the drawings and all claims presented in this application are currently in condition for allowance. Accordingly, Applicants respectfully request favorable consideration and that this application be passed to allowance.

Should any changes to the claims and/or specification be deemed necessary to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss the same.

Respectfully submitted,

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Andrew C. Gust
Registration No. 47,620
Akerman Senterfitt
for David Barnes, Reg. No. 47,407
Philips Electronics North America
Corporation
345 Scarborough Road
Briarcliff Manor, New York 10510
Telephone: 914-333-9693
Facsimile: 914-332-0615
File: US030208US